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ABSTRACT

This paper focuses on the dissemination function and explains how that function, in close cooperation with other State educational agency functions, can provide an orchestrated process through which educational needs might be met. The process outlined in this paper, the author contends, holds implications for State agency reorganization and a reassignment of resources. Besides maintaining a service function that draws on comprehensive national sources, the author maintains, the dissemination unit must have at least an abstract file, compatible with that in the ERIC system, containing all programs undertaken by the program offices and locally funded programs. Related documents are ED 031 821 and ED 061 428. (JF)

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Dissemination as a Process Component with Implications for Organizing a State Agency Dissemination Unit

by

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Preface

State Educational Agencies are in a key pivotal position for providing leadership in the attempts to improve education. However, the ability of State Agencies to provide such leadership has been hampered by functional fragmentation brought about in large part by categorical program attempts to solve our educational problems.

This paper is targeted on the function of dissemination and outlines how that function, in close cooperation with other State Agency functions, can provide an orchestrated process through which educational needs might be met, thereby improving the quality of education.

There is little doubt that the process outlined in this paper holds implications for State Agency reorganization and reassignment of resources. If those implications sound ominous, your time proceeding in this paper will probably be wasted.

The intent of this paper is to offer an alternative to the fragmented, duplicative and consequently inefficient manner by which we approach educational change at the present time. The process is essentially the "scientific method," something we all know is effective but rarely utilize in our work as educators.

Dissemination in education has been elevated in importance over the last few years mainly through the massive efforts of the National Center for Educational Communications (NCEC). Through NCEC (now NIE -- National Institute for Education) such educational information services as Educational Resources Information Center (ERIC) and Current Index to Journals in Education (CIJE) have become relatively well known and frequently utilized by researchers, practitioners and educational administrators throughout the country.

Through the funding of pilot state efforts, NCEC has demonstrated how effective dissemination linkages can assist practitioners in planning and solving their everyday problems.

Now that the importance of dissemination is widely recognized, educators must be cautious not to become dissemination system or program oriented to the point that they lose sight of the overriding process of educational improvement.

If it can be agreed that all programs (whether dissemination or categorical) strive for educational improvement or change, we have a basis for examining and making decisions as to how "process-oriented" dissemination should be organized.

All Federal, State and local programs require a planning, evaluative and a dissemination phase if their aim is educational improvement.

The major Federal and State programs which have significant impact at the local level are organized by funding category for dollar accountability purposes. Unfortunately, the traditional approach to program planning, accountability and dissemination have also been organized along these lines.

This traditional approach nurtures undue expansion of Federal and State bureaucracy since for every new program there are added components for planning, evaluation and dissemination.

Since the "accountability cry" has been longer and louder and relates directly to future appropriations, evaluation has received far greater attention than planning or dissemination. The reasons for this are clear. However, this earlier and greater emphasis on evaluation is critical to educational disseminators since they are now faced, not with the problems of systematizing or machine retrieval, but with the deeper problem of deciding what to systematize, catalog and retrieve. This is a difficult decision requiring evaluative data.

Since State Agencies are a pivotal point for most major research and program efforts, and the functions of planning, evaluation and dissemination are common to all such programs, it is logical to assume that the most efficient way to deal with these functions at the State level is by forming agency planning, evaluation and dissemination units by drawing on the various program sources for financial, material and staff support. This approach does away with the traditional fragmented approach to these functions which confuses the ultimate user and needlessly expands and duplicates bureaucratic structures.

The emphasis of dissemination at the Federal and State levels has been product oriented. Such an emphasis is consistent with the traditional approach which has needlessly segregated both programs and resultant products. In addition, the accountability push has lodged with <u>product</u> when in reality any real impact on product improvement must affect the <u>product development process</u>.

A process approach is faced with several major obstacles. First, it is a departure from tradition; secondly, the tradition has grown through economic and/or vested interest and, finally, the process approach probably requires institutional reorganization. Though these obstacles appear difficult to overcome, the future of the dissemination component and more importantly, the potential positive impact of individual programs on the educational system is ultimately dependent on overcoming these obstacles.

The Way It Is

A brief examination of how dissemination operates at present can best serve to set the stage for the changes suggested later.

Since the major thrust has been with the Federal level (NCEC/NIE) to the local level through State Agencies, the focus here will be on the State level where the operational changes must definitely take place.

In the past, and for the most part, today, the approach to dissemination has been a program responsibility. Federal legislation such as ESEA Title I, Title III, Title V, Vocational Education, Special Education and others have required planning, evaluative and dissemination components for all funded programs. This has resulted in a twofold problem:

1. The categorically aided programs operate independently even though in many cases the target population involves the same child.
2. The common functions that operate within the programs (specifically planning, evaluation and dissemination) are duplicative and create severe information storage, compatibility and access problems. For example, with

regard to the dissemination function, a local educator desiring information relating to "urban vocational education programs for the disadvantaged at the elementary level" might be faced with the following program sources of information at the State level:

A. Office of Urban Education

B. Office of Vocational Education

C. ESEA Title I Office

D. Elementary School Supervision Unit

The problem now should be clear. If the ultimate goal of the Federal and State programs is educational improvement, the mass of information sources or systems surely hinders the attainment of that goal.

The second problem is not unique to the dissemination function, but also holds for evaluation, for example: A reading teacher desiring information on effective reading programs at the elementary level is faced with even a greater problem since reading projects might be found in several funding program areas such as Urban Education, ESEA Title I, or ESEA Title III as well as in the Program Unit responsible for reading.

The circumstances described above exist due to lack of coordination precipitated by the addition of funding programs (Federal and State) for specific purposes which have been treated as entities unto themselves and assume all State Agency functions with little or no regard given to the overall educational process.

What Is the Process?

When you as an individual, local agency or a State Agency attempt to change or are charged with promoting improvement, there are several routine steps involved:

1. An assessment of need is made. This assessment represents the discrepancy between what is and what should be.

2. Information is retrieved relevant to the assessed needs to determine whether other individuals or agencies have faced that need and perhaps totally or partially solved your problem. If such information is available, you utilize it or adapt it to suit your needs. If not, you proceed in the process.

3. Alternative solutions are outlined and tested. If you represent a State Agency, this will probably take the form of a "Request for Proposals" whereby you seek to test your alternatives through small scale implementations.

4. Alternatives are evaluated. The alternatives might be weighed one against the other or measured to ascertain if your initial identified need has been met.

5. The alternative is validated. The proven alternative is transported to extra-experimental situations to determine its validity. (This step is nearly a functional part of the next.)

6. Solution is disseminated. If your alternative stands the test of both evaluation and validation, you will desire (and in most cases have an obligation) to inform others with similar needs that you have found a solution. Others will then utilize your information in step #2 when they retrieve information.

This then is the process through which we go to solve major program problems or to decide the most efficient means to get from your work location to the nearest airport. No matter how major or minor the problem or need, we all work through this process as individuals or as large bureaucratic agencies.

The fact that we are concerned here with State Education Agencies and several programs operate independently even though the ultimate goal is the same, certainly compounds the problem. However, the process approach described below will adhere to the six basic steps outlined above.

Since State Agencies have a responsibility to Plan, Evaluate and Disseminate all of the programs they undertake, it would seem logical that those functions might be most efficiently organized on an agency-wide basis obtaining their operational resource requirements from all program units. This provides an element of coordination and continuity to the planning (needs assessment), evaluation and dissemination functions and more importantly allows for the follow-up of programs designed to meet specific needs.

Since the focus of this paper is on dissemination, the functions and intra-agency relationships related to those functions will be discussed in depth.

The evolution of this model is documented as (1) "A State Design for Educational Research and Resource Utilization" (ED 031821) which outlined a structure for state agencies to implement a service oriented dissemination function and (2) "Installing A Coordinated Information Network in a State Education Agency: A Case Study of the Decision Process in New York" (ED 061 428) which examines how New York State installed the model outlined in the previous publication.

This paper outlines the critical relationships which have developed and spells out the basic process that underlies those relationships, a process that requires interdependent relationships.

Dissemination as a Service

The basic service goal of a dissemination unit is to provide access to the most comprehensive educational information sources so as to provide educators with relevant program and research information as quickly as possible.

The educational information resources have been highly organized through efforts of NCEC (NIE). The data bases available as a result of their efforts give educators access to the most highly organized and comprehensive source ever assembled for education. This has been accomplished through the Educational Resources Information Center (ERIC) System.

The data base is machine retrievable and the major portion of the source documents are on microfiche so speed of acquisition for the user can be easily increased through computer retrieval and microfiche duplication.

Routine service functions related to the ERIC data base should include computerized searching, selective dissemination and microfiche reproduction. Related services might be to provide similar functions for more localized data bases such as a State bank of program practices and human resources. Regardless of the additional data bases utilized, the service functions remain essentially library oriented.

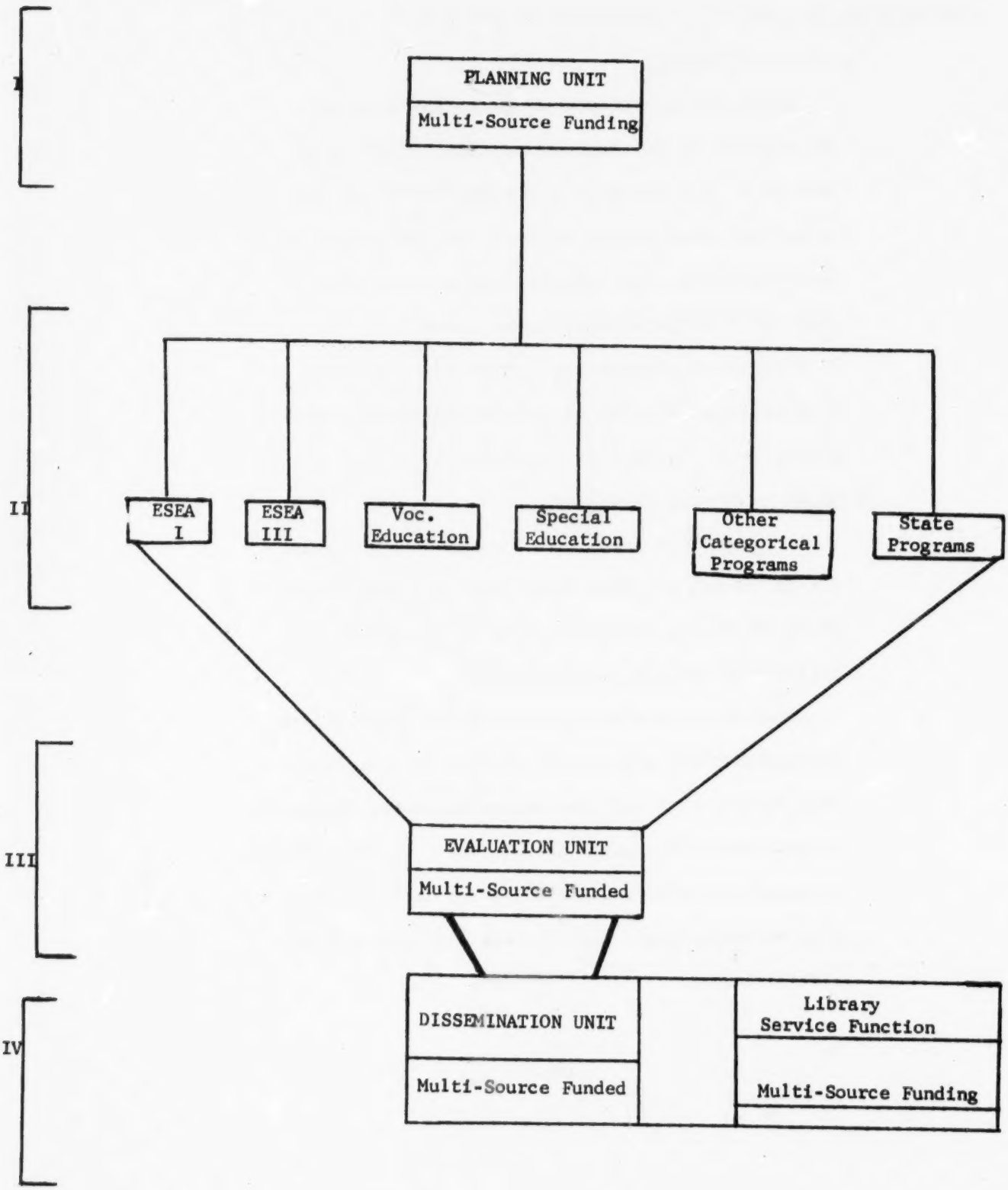
These routine service functions are merely a beginning, as are the routine planning (needs assessment) and evaluation functions. The real value of such functions lies in their inter-relatedness. Without regard for that key factor, none of the functions are worthwhile for improving education.

Why Functional Coordination?

The three major functions mentioned thus far must be related if they are to operate efficiently. Planning determines the needs and sets the direction, evaluation determines the effectiveness of the alternatives selected and dissemination insures that effective alternatives are available to those in need.

The component that accounts for the implementation of the alternative solutions has been omitted since, in reality, it may take the form of research or any of the categorically aided programs. The mechanics of that step are fragmented. Suffice it to say that means for testing alternatives are available, some more specialized than others, but all with a common goal -- meet an educational need.

Before proceeding with an example of the process approach which will hopefully illustrate the interdependence of process components, let us examine the State Agency organization as we envision it thus far:


I
PLANNING UNIT
Multi-Source Funding
II
ESEA I
ESEA III
Voc. Education
Special Education
Other Categorical Programs
State Programs
III
EVALUATION UNIT
Multi-Source Funded
IV
DISSEMINATION UNIT
Multi-Source Funded
Library Service Function
Multi-Source Funding

To clarify, and account for some of the State Agency units omitted in the diagram, the following explanation is offered:

Level I -- Planning

Representatives of all program components must be involved in the planning function. The actual mechanics of planning or needs assessment can best be accomplished through regional (within state) and local agencies. This insures that a needs assessment truly reflects practitioner needs.

After needs assessment, a first level translation of needs data can be made to relate more specifically to program unit responsibility.

Level II -- Program Operation

At the program level (the diagram is by no means all-inclusive) a second, more specific, translation of needs data is accomplished so as to relate it directly to program responsibilities.

After this translation, information sources (dissemination uint) are tapped in order to ascertain what related work has been accomplished that might be applicable to program needs. When the acquired information has been utilized to further delineate program needs, goals might be set and funding guidelines released.

Proposal development and final selection are carried out by each program office with the involvement of related subject, curriculum or program offices. This involvement insures that the specialists in reading, math, science, drug education, etc., are fully aware of projects undertaken within their area. These specialists might then assist the program office in monitoring the project.

Level III -- Evaluation

The evaluation unit will periodically require evaluation reports for each project through to the conclusion of the project. This information should be computerized and may use the school district coding or other designations for filing purposes. This provides for an administrative tool as well as a dissemination tool which will be discussed later.

Level IV -- Dissemination

Besides maintaining a service function which draws on comprehensive national sources (this function might be arranged through a State Library System or as part of the dissemination unit), the dissemination unit must have at least an abstract file (compatible with ERIC) containing all programs undertaken by the program offices and hopefully locally funded programs as well. Other information bases might relate to human resources but all should be compatible for machine retrieval and, at best, compatible with ERIC.

The dissemination unit should also have a collection of instructional materials and devices which would ultimately be utilized to implement programs.

The delivery system for the dissemination function will vary among states (see ED 031821 for a structural model for services and delivery) but should include regional centers which house substantial collections of instructional support materials and equipment. These regional centers must also have access to the computerized data base. Such concepts as "extension agents," "linker institutions," and "human interface between resource and user" come into play at this point and begin to broaden the concept of dissemination to "instructional support" which encompasses more than program information and materials. Systems developed for statistical information (management information) must also be accounted for and ultimately utilized in conjunction with program information. All of the dissemination functions which fall within the category of instructional support should be merged at the State level and delivered through regional agencies via a common vehicle.

We now can begin to see the interdependence of the State Agency components illustrated in the diagram. All components have a specific function, yet each is related to and dependent on the other. In essence, we have a State Agency poised and functionally ready to promote and provide leadership toward overall educational improvement.

Such activities as developing targeted information packages or selecting and disseminating information concerning exemplary programs become routine functions due to the high degree of coordination and assessability to appropriate planning and evaluation information.

An Example

To best illustrate the operation of a system as outlined above, the following section will relate specifically to a Federally funded categorical aid program (ESEA III) common to State Agencies.

The ESEA III program is being utilized as an example because of the broad scope of educational areas that might legitimately be served by that program. This allows for a fuller understanding of the implications the process approach has for the more specific funding programs and also allows (for illustrative purposes) full involvement of content or curriculum specialists.

1.0 Needs Assessment

1.1 Formal

Several means of needs assessment procedures are outlined in the literature. Basically, in order to yield sufficient information for adequate use throughout the process, the needs assessment should be coordinated and administered at the State Agency but actually undertaken through utilization of regional agencies or representatives.

The ESEA III input to such a procedure should be substantial since this program is broad in nature. Working with other program and content area representatives through the planning unit, a statewide needs assessment program must be organized and implemented.

In terms of the validity and reliability of needs assessment data, it is this formal procedure that adequately provides the information required to proceed in the cycle.

1.2 Informal

Since the ESEA III program office contributes to support of the evaluation and dissemination units, their staff and regional counterparts can provide valuable input to the formal needs assessment based on their knowledge of specific problem areas within given local districts.

The dissemination unit can provide especially valuable input since a good indicator of problem or need areas can be ascertained by reviewing the nature of information requests.

If a large percentage deal with a specific content or educational area, it can be logically assumed that it is a widespread problem or interest area.

1.3 Translation of Needs Assessment Data

After needs assessment data have been gathered on a statewide basis, it should be organized so as to relate to the various program and central specialty areas. The ESEA III staff assigned or working with the planning unit must insure that appropriate needs are expressed in relation to the ESEA III program.

2.0 ESEA Title III Request for Proposals (RFP)

2.1 Final Refinement of Needs Assessment Data

The ESEA III program office now must refine the data to assist in program goal setting and to set the stage upon which RFP's will be sent to local and regional districts.

2.2 The ESEA III RFP

RFP's may be tailored for specific regions if needs data indicate such action and if the regional agencies are capable of processing outgoing RFP's and the subsequent incoming proposals.

NOTE: Wherever possible, regional (in state) involvement and administration should be undertaken. The closer any of the activities outlined in this paper are to the local educators, the greater the chance for educational improvement to take place.

The final RFP must conform to the needs assessment information found above in light of information found available through the dissemination unit that relates to the needs data. This dissemination unit input prior to RFP formulation and distribution is critical if the ESEA III office is to avoid funding programs already in existence and proven effective in various locations around the State.

The development of information packages by the dissemination unit which relate to the needs assessment data ultimately allows for a more targeted RFP and insures proposal development based on available information and prior efforts.

2.3 ESEA III Proposal Workshops

In general, these sessions are held by the ESEA III office to assist proposal developers target on assessed needs areas.

Elements of such a workshop should include:

A. Process Orientation

A full explanation of the process outlined here should be presented to proposal developers so they understand that each funded project contributes directly to the fulfillment of the total process.

B. Technical Assistance

This can take two forms; first, proposal preparation in accordance with format, target population and educational technique and, secondly, assistance in retrieving relevant information from the dissemination unit that can be utilized to develop the proposal.

Assistance is also provided by content specialists whenever required.

After proposals are submitted either to the regional or to the ESEA III office, they are screened to insure that they relate to regionally relevant needs. Final selections for funding are then made on the basis of the usual criteria such as cost effectiveness, potential impact, project design, uniqueness, etc.

3.0 Project Implementation and Evaluation

3.1 ESEA III Office Responsibility

The ESEA III office has ultimate jurisdiction over the funded projects though this authority may be dispersed through regional agencies. Basically, the program office must insure adherence to Federal program and financial regulations and coordinate project monitoring and evaluative activities. Any drastic change in project direction must be approved at this level.

A key responsibility of the ESEA III office is to involve content specialists or units within the State Agency with appropriate projects. The importance of this involvement will be discussed below.

3.2 Responsibility of the Evaluation Unit

The evaluation unit staff responsible for ESEA III would have been involved during the workshop session in order to assist proposal developers in preparing measurable behavioral

objectives for the project that relate to need areas. Their responsibility now becomes a periodic assessment of how well the project is meeting its objectives. This is done through standardized and non-standardized testing and on-site visitations. This information is coded, classified and entered into a computerized data base upon conclusion of the project. (Henceforth this will be referred to as the "evaluation data base" and it contains periodic and final evaluation information as well as cost per pupil, number of students involved, achievement gains (if applicable), school district size, and grade levels involved.)

3.3 Responsibility of Related Content Area Units

If a given project deals with special education, staff members from that State Agency unit must be fully aware of the project and its progress. They can provide evaluative input and assist in project monitoring through on-site visitations. This guidance by experts in the field insures a worthwhile project and resultant instructional materials if any are to be produced.

It also gives the special education staff the opportunity to guide an ongoing project related to needs within their area rather than reacting to the final project report or completed materials produced by the project.

3.4 Responsibility of the Dissemination Unit

Throughout the project, the dissemination unit provides regular selective dissemination of relevant new information to project staff so they might take advantage of the latest research findings, programs, or instructional materials that relate to their project.

This kind of service is also provided to the ESEA III office as well as the content and evaluation units.

Upon completion of the project, a project abstract is prepared giving basic information regarding need area met, objectives pursued, a general project description and an indication as to the outcome of evaluation. In addition, school district name, address and code are included along with the project director's name, address and phone number. The school district code is critical since it allows ultimate access to the evaluation data base if indepth project information is required.

The project abstracts (hopefully compatible with ERIC abstracts) are assigned descriptors and entered into a "program database" maintained and operated by the dissemination unit.

4.0 Project Validation

Those projects whose evaluation data shows them to be highly effective are selected for validation. This validation procedure can best be accomplished through a

multi-state arrangement so as to insure the true validity of project results in a fashion that truly tests project exportability.

Information regarding validation results can be added to the evaluation data base thereby including it as potential service information. Information regarding the quality of materials generated by a project can be placed with the materials in a State Agency and/or regional IMC or be made available as a product review service.

From this point on, the functions become dissemination or diffusion oriented depending more on the dissemination unit for coordination and information support.

5.0 (Optional) Education Fair

As a means of making known those projects that prove highly effective and valid, a State or multi-state Education Fair might be held to provide both awareness and an opportunity for indepth discussions of projects with potential adoptors.

6.0 Consultative Followup and Diffusion

Project directors that operated projects of the quality to be selected for an Education Fair should be freed for a period of time (one year) so they might assist LEA's in adapting the project to specific settings.

Regional agencies might identify LEA's interested in specific projects and arrange for seminars to be held by the original project director and/or visitations to an installation site.

7.0 Diffusion Monitoring

This phase involves the monitoring of project adaption/adoption on a statewide basis. This activity might best be coordinated by the dissemination unit since the results of the monitoring process are of greatest value to that unit.

Those project directors and/or regional agency staff involved in the installation of validated projects keep records as to those schools adopting programs and, equally as important, on those LEA's that explored and attempted to adopt but did not install a validated project.

This information is forwarded to the dissemination unit. The positive adoption information provides both information for future ESEA III program funding support but more importantly, provides concrete evidence relating to educational improvement.

The LEA variables (demographic, organization, etc.) identified for those adopting and non-adopting LEA's are categorized and synthesized into those two groupings. It then may be possible to identify facilitating and inhibiting characteristics of LEA's as relates to their capability or willingness to adopt exemplary programs.

Obviously, there are numerous routine activities omitted from this example, but hopefully the logical flow of the process from needs assessment to need fulfillment and diffusion is clearly evident.

It must be kept in mind that the ESEA III program is simply an example. This process can and should be applied to other categorical aid programs, or for that matter, any organized attempt to meet the educational needs of a state. Certain steps may vary, for instance, a formal RFP may not be distributed, however, the basic problem solving steps must be adhered to and where no RFP is distributed, decisions as to alternative solutions, alternative selection, evaluation and eventual diffusion must still take place.

When State Educational Agencies were small, they were generally organized by functions related to the process outlined here. However, as categorical and other funding programs were introduced, those programs assumed all or most of the functions in the process thereby leading to the problem we face today -- how to coordinate these fragmented activities in an efficient way.

With regard to funds for such reorganization, since all or most programs are individually engaged in the functional activities, therein lie the sources of funding.

A diagram of the process outlined above as it specifically relates to the dissemination unit is attached as Appendix A.

Dissemination Unit Activities Operating Outside the Process (Spontaneous Educational Change)

Thus far the dissemination unit activities described here have been extremely proactive since the process approach inherently contains a strong element of predictable information need.

Much, probably most, of the educational change occurs through the isolated efforts of dedicated teachers and administrators. How does the process approach serve that critical, yet unnoticed change agent?

The process has systematized the information input and potential output. This allows teachers or administrators access to a program data bank supplemented by human resource information so specific expertise might be sought out for assistance in overcoming specific problems or for installing specific programs. The state information sources are compatible with the National ERIC system which furthers the potential information support.

The linkage of the state program bank with the state evaluation bank gives serious users the opportunity to move from brief program descriptions to indepth evaluative information regarding specific programs of interest. This evaluative information and diffusion monitoring information allows the potential adoptor to avoid potential pitfalls when considering or undertaking program installation.

Consequently, on the reactive side, we have an information unit capable of providing not only what programs and people might help in a given situation, but also what programs have proven to be most successful in like situations and what circumstances facilitate or hinder program installation and effectiveness. That goes far beyond the capability of the traditional dissemination unit and moves into the crux of the problem which is information utilization.

As previously mentioned, the delivery mechanism for such an information system will vary among states, but for most large states the following components are essential:

1. Computer capability at the State Agency level to handle the information processing and retrieval inherent in the process.

2. Regional agencies housing substantial instructional support sources including ERIC microfiche, microfiche of the state program bank and related instructional materials. These facilities can serve both instructional support and inservice training functions.
3. Regional staff trained in accessing the computer facility and capable of relating to the needs expressed by educators.

   Ideally, a core staff of subject specialists are located at the region. They draw upon the services of a regional information specialist who is knowledgeable about and capable of accessing the various information sources.
4. A multi-purpose telecommunications system capable of carrying the necessary information to, from, and between the regional agencies and the State Agency.

The basic structure of the delivery mechanism is illustrated in the Appendix to ED 031821.

The State Dissemination Unit

At the state level, a fully responsive, comprehensive dissemination unit goes beyond its name and becomes a reference center, instructional materials center, demonstration center and a home for those seeking clues as to the best diffusion methods to insure information utilization.

Many existing units typically found in State Departments of Education must be physically combined in order to offer full potential. Units such as a Research Coordinating Unit, an Education Library or reference Center, a Special Education (or other content area) Instructional Materials Center, a Curriculum Laboratory, technology display center, staff development center and perhaps the Public Information Office all have much to gain through a facility and staff merger to form an Educational Reference Center.

A Reference Center of this nature also offers a full range of instructional and information support functions for State Department staff, curriculum revision committees and educators in general.

Lastly, it serves as a model for regional agencies to follow which is where the real potential lies. Various Regional Reference Centers might be organized, each with a specialty area, but all compatible for acquisition and user access. The State Reference Center might provide back-up materials and services that are unavailable to the regions.

It might be argued that a State Reference Center that combines such units as mentioned above tends to dilute the impact of the individual programs. Rather, the author would contend that it enriches all services available and tends to force a focus on real student-oriented educational needs rather than on special interest programs or products and individual system-serving activities. In addition, it eliminates the access problem by reducing the number of points through which a client must access service offered through a variety of systems. The systems or programs are combined thus providing clients with a single access point for instructional support services.

An assessment of services currently available within an Education Department is the logical starting point for establishing this super-dissemination unit we call the Educational Reference Center.

Conclusion

State Agencies have lost sight of the process for which they exist. The simple "problem solving" process has been mutilated and rendered inefficient.

Hopefully, you recognize the process outlined here as being what we learned in Junior High School as being the --

Scientific Method

1. Define the problem
2. Formulate a hypothesis
3. Test the hypothesis
4. Accept or reject the hypothesis
5. Restate the hypothesis
6. Verify the hypothesis

Remember? Remembering is not enough! We must begin to apply it to the process of educational change.

NOTE: Throughout this paper the emphasis has been on instructional support information systems (evaluation and program). The management information systems should also be considered since in many cases pupil/teacher ratios, financial data, LEA enrollment size, etc., are determining factors when program implementation decisions are being made.

Whether or not portions of the management data base might ultimately be merged with an evaluative or program data base is doubtful. However, basic considerations must be made to allow access and possibly a computerized "cross walk" between the three kinds of

data. This provision ultimately allows for the development of a comprehensive educational information system of use to an extremely broad educational audience.

APPENDIX A

RELATIONSHIP OF THE PROCESS TO THE DISSEMINATION UNIT